

K.RAMAKRISHNAN
COLLEGE OF TECHNOLOGY
(AN AUTONOMOUS INSTITUTION)
SAMAYAPURAM, TRICHY-621 112

COURSE: Python Programming - I Year - II Sem - Project Module

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NAME: NAVEEN S
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Practical Record Note

Name : NAVEEN S

Register Number : 2303811710421103

Subject code/name : Laboratory

Programme :

CodeTantra

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Certified that this is a bonafide record of work done by
NAVEEN S of
Semester in **Python Programming - I Year - II Sem - Project**
Module Laboratory during the academic year 2023-2024

CodeTantra

Staff Incharge

Head of the Department

Submitted for the Practical exam held on:

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Internal Examiner

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Date:

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Date:

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Aim:

Project Module.

Program:

CTP28132.py

CodeTantra

```

import json
import os

DATA_FILE = 'data.json'

def read_data():
    if not os.path.exists(DATA_FILE):
        return {"buses": []}
    with open(DATA_FILE, 'r') as file:
        try:
            return json.load(file)
        except json.JSONDecodeError:
            return {"buses": []}

def write_data(data):
    with open(DATA_FILE, 'w') as file:
        json.dump(data, file, indent=4)

class Bus:
    def __init__(self, bus_id, route, total_seats):
        self.bus_id = bus_id
        self.route = route
        self.total_seats = total_seats
        self.available_seats = total_seats
        self.booked_seats = []

    def save(self):
        data = read_data()
        if any(bus['bus_id'] == self.bus_id for bus in data['buses']):
            print(f"Bus {self.bus_id} already exists.")
            return False
        data['buses'].append(self.__dict__)
        write_data(data)
        print(f"Bus {self.bus_id} added successfully.")
        return True

    @staticmethod
    def display(bus_id):
        data = read_data()
        for bus in data['buses']:
            if bus['bus_id'] == bus_id:
                print(f"Bus ID: {bus['bus_id']} ")
                print(f"Route: {bus['route']} ")
                print(f"Total Seats: {bus['total_seats']} ")
                print(f"Available Seats: {bus['available_seats']} ")
                print(f"Booked Seats: {bus['booked_seats']} ")
                return
        print(f"Bus {bus_id} not found.")

class Reservation:
    @staticmethod
    def book_seat(bus_id, seat_number):
        data = read_data()
        for bus in data['buses']:
            if bus['bus_id'] == bus_id:
                if seat_number in bus['booked_seats']:
                    print("Seat already booked.")

```

```

        return False
    if bus['available_seats'] <= 0:
        print("No available seats.")
        return False
    bus['booked_seats'].append(seat_number)
    bus['available_seats'] -= 1
    write_data(data)
    print(f"Seat {seat_number} booked successfully.")
    return True
print(f"Bus {bus_id} not found.")
return False

def main():
    while True:
        print("\n1. Add Bus")
        print("2. Display Bus")
        print("3. Book Seat")
        print("4. Exit")
        choice = input("Enter your choice: ")

        if choice == "1":
            bus_id = input("Enter bus ID: ")
            route = input("Enter route: ")
            total_seats = int(input("Enter total seats: "))
            bus = Bus(bus_id, route, total_seats)
            bus.save()

        elif choice == "2":
            bus_id = input("Enter bus ID: ")
            Bus.display(bus_id)

        elif choice == "3":
            bus_id = input("Enter bus ID: ")
            seat_number = int(input("Enter seat number: "))
            Reservation.book_seat(bus_id, seat_number)

        elif choice == "4":
            break

        else:
            print("Invalid choice. Please try again.")

    if __name__ == "__main__":
        main()

```

Output:

Test case - 1

User Output

Hello World

Hello World

Result:

Thus the above program is executed successfully and the output has been verified

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